

U.S. Patent Application Serial No. 09/901,572  
Amendment dated April 19, 2004  
Reply to OA of October 20, 2003

### IN THE CLAIMS

Please cancel claims 1-3, 6-8 and 19 without prejudice or disclaimer.

Please amend claims 4, 5 and 9-18 as follows:

#### **Claims 1- 3 (Canceled)**

**Claim 4 (Currently amended):** ~~The modified DNA molecule according to claim 1,~~

A DNA molecule, whose sequence comprises:

a portion of the genome of a prokaryotic cell in which at least one DNA region encoding an NXB site, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs at said NXB site during expression of the DNA molecule in a eukaryotic cell,

wherein said prokaryotic cell is Mycoplasma.

**Claim 5 (Currently amended):** ~~The modified DNA molecule according to claim 1,~~

A DNA molecule, whose sequence comprises:

a portion of the genome of a prokaryotic cell in which at least one DNA region encoding an NXB site, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs at said NXB site during expression of the DNA molecule in a eukaryotic cell,

wherein said DNA molecule derived from a prokaryotic cell is a DNA derived from

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Mycoplasma having the DNA sequence according to ~~claim 1 or 2~~ SEQ ID. NO. 1 or SEQ ID NO.

2.

**Claims 6-8 (Canceled).**

**Claim 9 (Currently amended):** 9. (Currently amended): ~~The fused DNA molecule according to claim 6;~~

A fused DNA molecule, wherein a DNA encoding a signal sequence has been ligated to the N-terminal end of a DNA molecule,

wherein the sequence of said DNA molecule comprises a portion of the genome of a prokaryotic cell in which at least one DNA region encoding an NXB site, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs at said NXB site during expression of the DNA molecule in a eukaryotic cell so that the fused DNA molecule may be expressed as a fusion protein,

wherein said DNA molecule derived from a prokaryotic cell has a DNA sequence described in SEQ ID NO: 1 or 2 derived from Mycoplasma, and said signal sequence is a signal sequence ~~derived~~ from the gB of Marek's disease virus or a signal sequence ~~derived~~ from the gG of Rabies virus.

**Claim 10 (Currently amended):** A recombinant virus that has integrated therein

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(1) a DNA molecule ~~derived from~~ whose sequence comprises a portion of the genome of a prokaryotic cell in which at least one ~~of the DNA regions~~ region encoding an NXB site, wherein ( N is asparagine, X is any amino acid other than proline, and B is serine or threonine, ) has been ~~modified~~ altered so that no N-glycosylation occurs at said NXB site during the expression of the DNA molecule in a eukaryotic cell, or

(2) a fused DNA molecule in which a DNA encoding a signal sequence is ligated to the N-terminal end of said ~~modified~~ DNA molecule so that it may be expressed as a fusion protein.

**Claim 11 (Currently amended):** The recombinant virus according to claim 10, wherein said the alteration that ~~attempts to prevent~~ prevents N-glycosylation is at least one of the following:

(1) the alteration of the DNA sequence encoding asparagine (N) to a DNA sequence encoding an amino acid other than asparagine;

(2) the alteration of the DNA sequence encoding any amino acid (X) other than proline to a DNA sequence encoding proline; and

(3) the alteration of the DNA sequence encoding serine or threonine (B) to a DNA sequence encoding an amino acid other than serine or threonine.

**Claim 12 (Currently amended):** A recombinant virus that has integrated therein

(1) a DNA molecule whose sequence comprises a portion of the genome of a prokaryotic cell in which at least one DNA region encoding NXB, wherein N is asparagine, X is any amino acid other

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than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs during the expression of the DNA molecule in a eukaryotic cell, or

(2) a fused DNA molecule in which a DNA encoding a signal sequence is ligated to the N-terminal end of said DNA molecule so that it may be expressed as a fusion protein ~~The recombinant virus according to claim 10,~~

wherein said ~~DNA molecule derived from~~ portion of the genome of a prokaryotic cell is a DNA molecule derived from Mycoplasma having the DNA sequence according to ~~claim 1 or 2~~ SEQ ID. NO. 1 or SEQ ID NO. 2.

**Claim 13 (Currently Amended):** A recombinant virus that has integrated therein a fused DNA molecule, wherein a first DNA encoding a signal sequence that has been ~~modified~~ altered so that no N-glycosylation occurs in the protein encoded by said first DNA during the expression in a eukaryotic cell has been ligated to the N-terminal end of a second DNA molecule ~~derived from~~ comprising a portion of the genome of a prokaryotic cell in which at least one ~~of the~~ DNA regions encoding NXB, wherein ( N is asparagine, X is any amino acid other than proline, and B is serine or threonine, ) has been ~~modified~~ altered so that no N-glycosylation occurs at said NXB site during the expression of said fused DNA molecule in a eukaryotic cell, so that it may be expressed as a fusion protein.

**Claim 14 (Currently amended):** A recombinant virus that has integrated therein a fused

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DNA molecule, wherein a first DNA encoding a signal sequence that has been altered so that no N-glycosylation occurs in the protein encoded by said first DNA during the expression in a eukaryotic cell has been ligated to the N-terminal end of a second DNA molecule comprising a portion of the genome of a prokaryotic cell in which at least one DNA regions encoding NXB, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs at said NXB site during the expression of said fused DNA molecule in a eukaryotic cell, so that it may be expressed as a fusion protein ~~The recombinant virus according to claim 13,~~

wherein said signal sequence is a signal sequence ~~derived~~ from the gB gene of Marek's disease virus or a signal sequence ~~derived~~ from the gG gene of Rabies virus.

**Claim 15 (Currently amended):** A recombinant virus that has integrated therein

(1) a DNA molecule whose sequence comprises a portion of the genome of a prokaryotic cell in which at least one DNA region encoding NXB, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs during the expression of the DNA molecule in a eukaryotic cell, or

(2) a fused DNA molecule in which a DNA encoding a signal sequence is ligated to the N-terminal end of said DNA molecule so that it may be expressed as a fusion protein, or

a recombinant virus that has integrated therein a fused DNA molecule, wherein a first DNA encoding a signal sequence that has been altered so that no N-glycosylation occurs in the protein encoded by said first DNA during the expression in a eukaryotic cell has been ligated to the N-

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terminal end of a second DNA molecule comprising a portion of the genome of a prokaryotic cell in which at least one DNA regions encoding NXB, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs at said NXB site during the expression of said fused DNA molecule in a eukaryotic cell, so that it may be expressed as a fusion protein ~~The recombinant virus according to claim 10 or 13, wherein said virus is a poxvirus or a herpesvirus.~~

**Claim 16 (Currently amended):** A recombinant virus that has integrated therein

(1) a DNA molecule whose sequence comprises a portion of the genome of a prokaryotic cell in which at least one DNA region encoding NXB, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs during the expression of the DNA molecule in a eukaryotic cell, or

(2) a fused DNA molecule in which a DNA encoding a signal sequence is ligated to the N-terminal end of said DNA molecule so that it may be expressed as a fusion protein, or

a recombinant virus that has integrated therein a fused DNA molecule, wherein a first DNA encoding a signal sequence that has been altered so that no N-glycosylation occurs in the protein encoded by said first DNA during the expression in a eukaryotic cell has been ligated to the N-terminal end of a second DNA molecule comprising a portion of the genome of a prokaryotic cell in which at least one DNA regions encoding NXB, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs at said NXB site during the expression of said fused DNA molecule in a eukaryotic cell, so that it

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may be expressed as a fusion protein ~~The recombinant virus according to claim 10 or 13, wherein~~  
said virus is a virus that infects avians.

**Claim 17 (Currently amended):** A recombinant virus that has integrated therein

(1) a DNA molecule whose sequence comprises a portion of the genome of a prokaryotic cell  
in which at least one DNA region encoding NXB, wherein N is asparagine, X is any amino acid other  
than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs during  
the expression of the DNA molecule in a eukaryotic cell, or

(2) a fused DNA molecule in which a DNA encoding a signal sequence is ligated to the N-  
terminal end of said DNA molecule so that it may be expressed as a fusion protein, or

a recombinant virus that has integrated therein a fused DNA molecule, wherein a first DNA  
encoding a signal sequence that has been altered so that no N-glycosylation occurs in the protein  
encoded by said first DNA during the expression in a eukaryotic cell has been ligated to the N-  
terminal end of a second DNA molecule comprising a portion of the genome of a prokaryotic cell  
in which at least one DNA regions encoding NXB, wherein N is asparagine, X is any amino acid  
other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs  
at said NXB site during the expression of said fused DNA molecule in a eukaryotic cell, so that it  
may be expressed as a fusion protein ~~The recombinant virus according to claim 10 or 13, wherein~~  
said virus is an avipoxvirus.

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**Claim 18 (Currently amended):** A recombinant virus that has integrated therein

(1) a DNA molecule whose sequence comprises a portion of the genome of a prokaryotic cell in which at least one DNA region encoding NXB, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs during the expression of the DNA molecule in a eukaryotic cell, or

(2) a fused DNA molecule in which a DNA encoding a signal sequence is ligated to the N-terminal end of said DNA molecule so that it may be expressed as a fusion protein, or

a recombinant virus that has integrated therein a fused DNA molecule, wherein a first DNA encoding a signal sequence that has been altered so that no N-glycosylation occurs in the protein encoded by said first DNA during the expression in a eukaryotic cell has been ligated to the N-terminal end of a second DNA molecule comprising a portion of the genome of a prokaryotic cell in which at least one DNA regions encoding NXB, wherein N is asparagine, X is any amino acid other than proline, and B is serine or threonine, has been altered so that no N-glycosylation occurs at said NXB site during the expression of said fused DNA molecule in a eukaryotic cell, so that it may be expressed as a fusion protein ~~The recombinant virus according to claim 10 or 13, wherein said virus is a Marek's disease virus type I, type II, or type III.~~

**Claim 19 (Canceled).**

**Claim 20 (Original):** A vaccine comprising the recombinant virus according to claim 10 or 13.